

WHAT I CLAIM IS

1. An image processing system comprising:  
means for storing an image;  
means for accessing the image from said storing means;  
geometric means for geometrically processing the image  
accessed with said accessing means, said geometrical processing  
including rotating, translating, scaling, and perspective  
processing the image accessed with said accessing means; and  
spatial means for spatially processing a geometrically  
processed rotated, translated, scaled, and perspective processed  
image from said geometric means to generate a spatially processed  
image having reduced aliasing.

2. The system as set forth in claim 1 above, wherein said  
storing means includes an optical disk for storing the image in  
analog form and wherein said accessing means includes means for  
generating the accessed image to said geometric means as a  
digital image; said system further comprising a display monitor  
for displaying the spatially processed image generated with said  
spatial means.

3. A machine vision system comprising:  
means for acquiring an input image;  
means for storing a reference image;  
means for registering the input image and the reference image;  
means for comparing the registered input image and reference image; and  
means for generating an output signal in response to the comparing with said comparing means.

4. The system as set forth in claim 3 above, wherein said acquiring means is a video camera for acquiring the input image, wherein said storing means is an image memory for storing the reference image, wherein said registering means is a geometric processor for rotating, translating, and scaling the input image to cause the input image to register with the reference image, and wherein said comparing means is a spatial filter for comparing the registered input image and reference image; said system further comprising artificial intelligence means for processing the output signal.

5. A system for processing an image comprising:  
a database for storing a database image;  
an image memory for storing a portion of the database image;  
memory loading means for loading a portion of the database image into said image memory including means for scrolling the database image into said image memory to provide image motion;  
and  
a processor for processing the image stored in said image memory to provide a processed image.

6. The system as set forth in claim 5 above, wherein said database includes a digital memory for storing a database image having more than 10-million pixels, wherein said image memory includes means for storing a portion of the database image having less than 2-million pixels, wherein said memory loading means includes means includes a processor operating under control of a memory management program for loading a portion of the database image into said image memory, and wherein said processor includes means for geometrically processing the image stored in said image memory to provide a geometrically processed image, means for spatially processing the geometrically processed image from said image processor to provide a geometrically and spatially processed image, and display means for displaying the geometrically and spatially processed image.

7. A geometric processor comprising:  
means for storing an image;  
means for scanning out the image stored in said storing  
means;  
means for displaying the image scanned out with said  
scanning out means.

8. The processor as set forth in claim 7 above, wherein  
said storing means includes an image memory for storing the image  
in memory map form, wherein said scanning out means includes  
means for scanning out the image stored in said image memory at  
an angle to provide a rotated scanned out image, and wherein said  
displaying means includes means for displaying the image scanned  
out with said scanning out means as a rotated image.

9. The processor as set forth in claim 7 above, wherein  
said storing means includes an image memory for storing the image  
in memory map form, wherein said scanning out means includes  
means for scanning out the image stored in said image memory at  
greater than pixel sampling steps to provide a compressed scanned  
out image, and wherein said displaying means includes means for  
displaying the image scanned out with said scanning out means as  
a compressed image.

10. The processor as set forth in claim 7 above, wherein  
said storing means includes a plurality of integrated circuit  
ROMs for storing image information.

11. The processor as set forth in claim 7 above, wherein said storing means includes an image memory for storing the image in memory map form, wherein said scanning out means includes means for scanning out the image stored in said image memory at less than pixel sampling steps to provide an expanded scanned out image, and wherein said displaying means includes means for displaying the image scanned out with said scanning out means as an expanded image.

12. The processor as set forth in claim 7 above, wherein said storing means includes an image memory for storing the image in memory map form, wherein said scanning out means includes means for scanning out the image stored in said image memory at varying pixel sampling steps to provide a warped scanned out image, and wherein said displaying means includes means for displaying the image scanned out with said scanning out means as a warped image.

13. The processor as set forth in claim 7 above, wherein said storing means includes an image memory for storing the image in memory map form, wherein said scanning out means includes means for scanning out the image stored in said image memory at range variable pixel sampling steps to provide a 3D perspective scanned out image, and wherein said displaying means includes means for displaying the image scanned out with said scanning out means as a 3D perspective image.

14. The processor as set forth in claim 7 above, wherein said storing means includes an image memory for storing the image in memory map form, wherein said scanning out means includes means for scanning out the image stored in said image memory at a range variable angle to provide a 3D perspective scanned out image, and wherein said displaying means includes means for displaying the image scanned out with said scanning out means as a 3D perspective image.

15. A spatial processor comprising:

input means for generating a sequence of spatial samples;

storing means for generating a sequence of a plurality of parallel spatial samples in response to the sequence of spatial samples from said input means; and

a processor for generating a sequence of spatial samples in response to the sequence of a plurality of parallel samples from said storing means.

16. The spatial processor as set forth in claim 15 above, wherein said input means includes a geometric processor for generating the sequence of spatial samples as a geometrically processed pixel stream having a sequence of single pixels, wherein said storing means includes a multiple line buffer for storing multiple lines of pixels from said pixel stream and kernel register means including a plurality of kernel registers for storing a kernel of pixels from said multiple line buffer to generate the sequence of a plurality of parallel spatial samples

stored in said kernel registers, and wherein said spatial processor includes means for generating the sequence of spatial samples in response to the kernel of pixels stored in the kernel registers; said processor further comprising a weight memory for storing a kernel of weights and means for weighting and summing kernel of pixels stored in said kernel registers with the kernel of weights stored in said weight memory to generate the sequence of spatial samples from said processor.

17. An image processing system comprising:

a database memory for storing an image in a plurality of image locations, where each of the image locations stores the image having different amounts of compression from the image stored in the others of the plurality of image locations;

compression means for selecting a amount of compression of the image stored in the database memory;

accessing means for accessing the image from one of the image locations in said database memory in response to selection of the amount of compression by said compression means;

image processing means for processing the image accessed with said accessing means; and

display means for displaying the image processed with said image processing means.

18. An image processing system comprising:

means for generating an image;

an image processor for processing the image generated with said image generating means, said image processor including

a. a stored program digital computer for processing frame related information under stored program control and

b. digital processing logic for processing pixel related information in response to the frame related information generated with said computer;

a display for displaying an image in response to the pixel related information processed with said digital processing logic.

19. The system as set forth in claim 18 above, wherein said image generating means includes a digital memory for generating the image, wherein said image processor includes a geometric processor for geometrically processing the image generated with said image generating means, wherein said stored program digital computer includes interpolation means for processing the frame related information with interpolation of frame information between different frames under stored program control, and wherein said digital processing logic includes address generators means for geometrically processing pixel related information by sequentially generating a plurality of pixel addresses to scan out pixel information in response to the frame related information generated with said computer. related information processed with said digital processing logic.



20. The system as set forth in claim 18 above, wherein said image generating means includes a video camera for generating the image, wherein said image processor includes a spatial processor for spatially processing the image generated with said camera, wherein said stored program digital computer includes window means for processing the frame related information as window information under stored program control, and wherein said digital processing logic includes kernel means for spatially processing pixel related information in response to the frame related information generated with said computer.

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